START

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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

JAN 25 1995

95-PCA-129

Mr. David L. Lundstrom
Section Manager
200 Areas
Nuclear Waste Program
State of Washington
Department of Ecology
1315 West Fourth Avenue
Kennewick, Washington 99336

Mr. Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, Washington 99352

Dear Messrs. Lundstrom and Sherwood:

HANFORD FACILITY DANGEROUS WASTE PART A PERMIT APPLICATION FORM 3, REVISION 6, FOR THE 242-A EVAPORATOR (WA7890008967) (TSD: T-2-6)

39103

Enclosed is the Hanford Facility Dangerous Waste Part A Permit Application (Part A) Form 3, Revision 6, for the 242-A Evaporator. The 242-A Evaporator is located in the 200 East Area of the Hanford Facility and is used for the treatment (evaporation) of Double-Shell Tank System liquid mixed waste by the removal of water and most volatile organics.

The Part A, Form 3, has been revised to add greater-than-90-day tank storage (Process Code S02) of liquid mixed waste in Tanks C-100 and C-A-1, per the 242-A Evaporator Notice of Intent currently on file with the State of Washington Department of Ecology (Ecology). The Part A, Form 3, also has been revised to convert all English based measures to metric in accordance with U.S. Department of Energy direction.

These changes to the Part A, Form 3, were made in compliance with Washington Administrative Code 173-303. This regulation requires the submittal of a revised Part A, Form 3, for the addition of storage activities at a treatment, storage, and/or disposal unit under interim status.

JAN 25 1995

Should you have any questions regarding the 242-A Evaporator Part A, Form 3, please contact Mr. C. E. Clark of the U.S. Department of Energy, Richland Operations Office on (509) 376-9333 or Mr. R. C. Bowman of the Westinghouse Hanford Company on (509) 376-4876.

Sincerely,

James E. Rasmussen

James E. Rasmussen, Acting Program Manager
Office of Environmental Assurance,
Permits, and Policy
DOE Richland Operations Office

EAP:CEC

William T. Dixon, Manager
Environmental Services
Westinghouse Hanford Company

Enclosure:
242-A Evaporator Dangerous Waste
Part A Permit Application
Form 3, Revision 6

cc w/encl:
EDMC, H6-08
B. Burke, CTUIR
D. Duncan EPA
R. Bowman, WHC
M. Jaraysi, Ecology
R. Jim, YIN
M. Jaraysi, Ecology
S. McKinney, Ecology
T. Michelena, Ecology
D. Powaukee, NPT
S. Price, WHC

cc w/o encl:
W. Dixon, WHC

ENCLOSURE

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 character/inch).

FORM 3

DANGEROUS WASTE PERMIT APPLICATION

1. EPA/STATE I.D. NUMBER: W A 7 8 9 0 0 0 8 9 6 7

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED *(mo., day, & yr.)*	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA/STATE I.D. Number, or if this is a revised application, enter your facility's EPA/STATE I.D. Number in Section I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

☐ 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

MO. 0 3 | DAY 1 8 | YR. 7 7 — FOR EXISTING FACILITIES, PROVIDE THE DATE *(mo., day, & yr.)* OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

☐ 2. NEW FACILITY *(Complete item below)*

MO. | DAY | YR. — FOR NEW FACILITIES, PROVIDE THE DATE *(mo., day, & yr)* OPERATION BEGAN OR IS EXPECTED TO BEGIN

B. REVISED APPLICATION *(place an "X" below and complete Section I above)*

☒ 1. FACILITY HAS AN INTERIM STATUS PERMIT

☐ 2. FACILITY HAS A FINAL PERMIT

III. PROCESSES - CODES AND CAPACITIES

A. PROCESS CODE - Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the *(Section III-C)*.

B. PROCESS DESIGN CAPACITY - For each code entered in column A enter the capacity of the process.

1. AMOUNT - Enter the amount.

2. UNIT OF MEASURE - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER (barrel, drum, etc)	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D80	GALLONS OR LITERS
LANDFILL	D81	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D82	*ACRES OR HECTARES*
OCEAN DISPOSAL	D83	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D84	GALLONS OR LITERS
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Section III-C.)	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G
LITERS	L
CUBIC YARDS	Y
CUBIC METERS	C
GALLONS PER DAY	U
LITERS PER DAY	V
TONS PER HOUR	D
METRIC TONS PER HOUR	W
GALLONS PER HOUR	E
LITERS PER HOUR	H
ACRE-FEET	A
HECTARE-METER	F
ACRES	B
HECTARES	Q

EXAMPLE FOR COMPLETING SECTION III *(shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons.* The facility also has an incinerator that can burn up to 20 gallons per hour.

LINE NUMBER	A. PROCESS CODE *(from list above)*	B. PROCESS DESIGN CAPACITY 1. AMOUNT *(specify)*	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE *(enter code)*	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE *(from list above)*	B. PROCESS DESIGN CAPACITY 1. AMOUNT *(specify)*	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE *(enter code)*	FOR OFFICIAL USE ONLY
X-1	S02	600	G		5				
X-2	T03	20	E		6				
1	T04	870,642	V		7				
2	S02	170,597	L		8				
3					9				
4					10				

Continued from the front.

III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESS (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

T04 The 242-A Evaporator is located in the 200 East Area of the Hanford Facility and is used to treat mixed waste from the Double-Shell Tank (DST) System by removing water and most volatile organics. Two waste streams leave the 242-A Evaporator following the treatment process. The first waste stream, the concentrated slurry (approximately 30 to 40 percent of the water is removed during evaporation along with a portion of the volatile organics), is pumped back into the DST System. The second waste stream, process condensate (containing a portion of the volatile organics removed from the mixed waste during the evaporation process), is routed through condensate filters for treatment before release to a retention basin (Liquid Effluent Retention Facility). Offgasses from the process are routed through a deentrainment unit, a prefilter, and high-efficiency particulate air filters before being discharged to the environment. The 242-A Evaporator is used to treat up to 870,642 liters (230,000 gallons) of mixed waste per day.

S02 Tank C-100, a 4.3-meter (14-feet) diameter and 5.9-meter (19-feet) high tank with a maximum design capacity of 67,380 liters (17,800 gallons), is located in the condenser room. Process condensate from the primary, inter-, and aftercondensers drain by gravity to tank C-100, which is constructed of stainless steel. In addition, tank C-100 receives potentially contaminated drainage from the vessel vent system via a 102-liter (27-gallon) seal pot.

Tank C-A-1 is located in the evaporator room and consists of two sections: the lower (liquid) section, a 4.3-meter (14-foot) diameter stainless steel shell, and the upper (vapor) section, a 3.5-meter (11.6-foot) diameter stainless steel shell, containing two wire-mesh deentrainment pads for the removal of liquids and solids that could be carried into the vapor header. Process slurry from the reboiler discharges to the evaporator vessel (tank C-A-1). Concentrated process slurry exits the lower section of tank C-A-1 via the 71-centimeter (28-inch) recirculation line. Vapor flows out of tank C-A-1 through a 107-centimeter (42-inch) vapor line at the top. The maximum design capacity of tank C-A-1 is 103,217 liters (27,267 gallons).

IV. DESCRIPTION OF DANGEROUS WASTES

A. DANGEROUS WASTE NUMBER - Enter the four digit number from Chapter 173-303 WAC for each listed dangerous waste you will handle. If you handle dangerous wastes which are not listed in Chapter 173-303 WAC, enter the four digit number(s) that describes the characteristics and/or the toxic contaminants of those dangerous wastes.

B. ESTIMATED ANNUAL QUANTITY - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE - For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed dangerous waste: For each listed dangerous waste entered in column A select the code(s) from the list of process codes contained in Section III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed dangerous wastes: For each characteristic or toxic contaminant entered in Column A, select the code(s) from the list of process codes contained in Section III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed dangerous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: DANGEROUS WASTES DESCRIBED BY MORE THAN ONE DANGEROUS WASTE NUMBER - Dangerous wastes that can be described by more than one Waste Number shall be described on the form as follows:

1. Select one of the Dangerous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other Dangerous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other Dangerous Waste Number that can be used to describe the dangerous waste.

EXAMPLE FOR COMPLETING SECTION IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. DANGEROUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2			T 0 3 D 8 0	included with above

Continued from page 2.
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

I.D. NUMBER *(entered from page 1)*: WA7890008967

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

LINE NO.	A. DANGEROUS WASTE NO. *(enter code)*	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE *(enter code)*	D. PROCESSES 1. PROCESS CODES *(enter)*	D. PROCESSES 2. PROCESS DESCRIPTION *(If a code is not entered in D(1))*
1	D001	635,029,318	K	T04	Treatment - Evaporation
2	D002				
3	D003				
4	D004				
5	D005				
6	D006				
7	D007				
8	D008				
9	D009				
10	D010				
11	D011				
12	D018				
13	D019				
14	D022				
15	D028				
16	D029				
17	D030				
18	D033				
19	D034				
20	D035				
21	D036				
22	D038				
23	D039				
24	D040				
25	D041				
26	D043				

Continued from page 2.
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

I.D. NUMBER *(entered from page 1)*: WA7890008967

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

LINE NO.	A. DANGEROUS WASTE NO. *(enter code)*	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE *(enter code)*	D. PROCESSES 1. PROCESS CODES *(enter)*	D. PROCESSES 2. PROCESS DESCRIPTION *(if a code is not entered in D(1))*
1	WT01		K	T04	Treatment - Evaporation (cont)
2	WT02				
3	WC02				
4	WP01				
5	WP02				
6	F001				
7	F002				
8	F003				
9	F004				
10	F005				
11	F039				Included With Above
12	D001	348,241	K	S02	Storage - Tank
13	D002				
14	D003				
15	D004				
16	D005				
17	D006				
18	D007				
19	D008				
20	D009				
21	D010				
22	D011				
23	D018				
24	D019				
25	D022				
26	D028				

Continued from page 2.
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

I.D. NUMBER *(entered from page 1)*: WA7890008967

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

LINE NO.	A. DANGEROUS WASTE NO. *(enter code)*	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE *(enter code)*	D. PROCESSES 1. PROCESS CODES *(enter)*	D. PROCESSES 2. PROCESS DESCRIPTION *(If a code is not entered in D(1))*
1	D029		K	S02	Storage - Tank (cont)
2	D030				
3	D033				
4	D034				
5	D035				
6	D036				
7	D038				
8	D039				
9	D040				
10	D041				
11	D043				
12	WT01				
13	WT02				
14	WC02				
15	WP01				
16	WP02				
17	F001				
18	F002				
19	F003				
20	F004				
21	F005				
22	F039				Included With Above
23					
24					
25					
26					

Continued from the front.

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM SECTION D(1) ON PAGE 3.

The 242-A Evaporator is used to treat and store mixed waste from the Double-Shell Tank System. Two waste streams leave the 242-A Evaporator following the treatment process: a concentrated slurry waste stream that is routed to the Double-Shell Tank System and a process condensate effluent waste stream that is routed to the Liquid Effluent Retention Facility.

The concentrated slurry is regulated as a dangerous waste due to corrosivity (D002) and toxicity, and is regulated as an extremely hazardous waste (EHW) due to toxicity under the mixture rule. This mixed waste stream is considered corrosive because the pH of the waste exceeds 12.5 standard units. This mixed waste stream also is characterized as toxic due to the concentrations of chromium (D007), lead (D008), cadmium (D006), and silver (D011), and is EHW toxic due to the concentrations of nitrite and hydroxide ions.

The process condensate effluent is regulated as a dangerous waste due to the toxicity of ammonia and the presence of nonspecific waste sources F001 through F005, and F039. Multi-source leachate (F039) is included as a waste derived from nonspecific source wastes F001 through F005.

The list of dangerous constituents under item IV.A includes toxic constituents of cadmium (D006) and silver (D011). These constituents have not been detected in the waste, but knowledge of the process providing waste to the 242-A Evaporator indicates the strong possibility that these constituents will be in the waste. The list of Toxicity Characteristics Leaching Procedure constituents (WT01, WT02, WC02, WP01, and WP02) under item IV.A have not been detected in the waste; however, the potential exists for treating these constituents at the 242-A Evaporator. All other waste listed is based on analytical data. The annual waste quantity listed under item IV.B. was calculated using an operating schedule of 365 days per year, and a specific gravity for the waste of 2.0. This calculation was done to provide a maximum estimate of annual waste quantity.

V. FACILITY DRAWING — Refer to attached drawing.

All existing facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail)*.

VI. PHOTOGRAPHS — Refer to attached photographs.

All existing facilities must include photographs *(aerial or ground-level)* that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail)*.

VII. FACILITY GEOGRAPHIC LOCATION — This information is provided on the attached drawings and photos.

LATITUDE *(degrees, minutes, & seconds)*	LONGITUDE *(degrees, minutes, & seconds)*

VIII. FACILITY OWNER

[x] A. If the facility owner is also the facility operator as listed in Section VII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. *(area code & no.)*

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME *(print or type)*	SIGNATURE	DATE SIGNED
John D. Wagoner, Manager U.S. Department of Energy Richland Operations Office	John D. Wagoner	1/25/95

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME *(print or type)*	SIGNATURE	DATE SIGNED
SEE ATTACHMENT		

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

John D. Wagoner — 1/25/95

Owner/Operator
John D. Wagoner, Manager
U.S. Department of Energy
Richland Operations Office

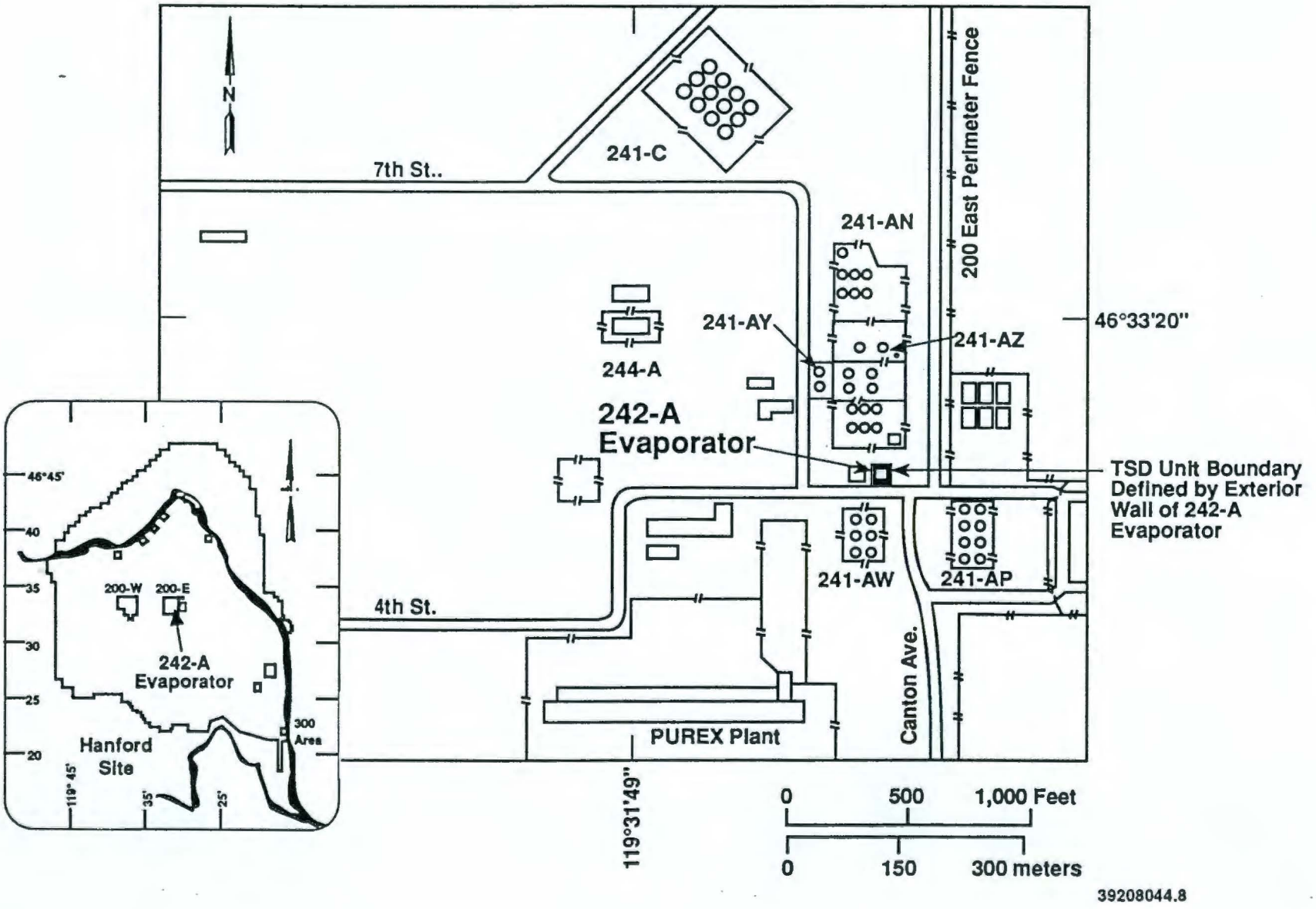
Date

A. LaMar Trego — 12/7/94

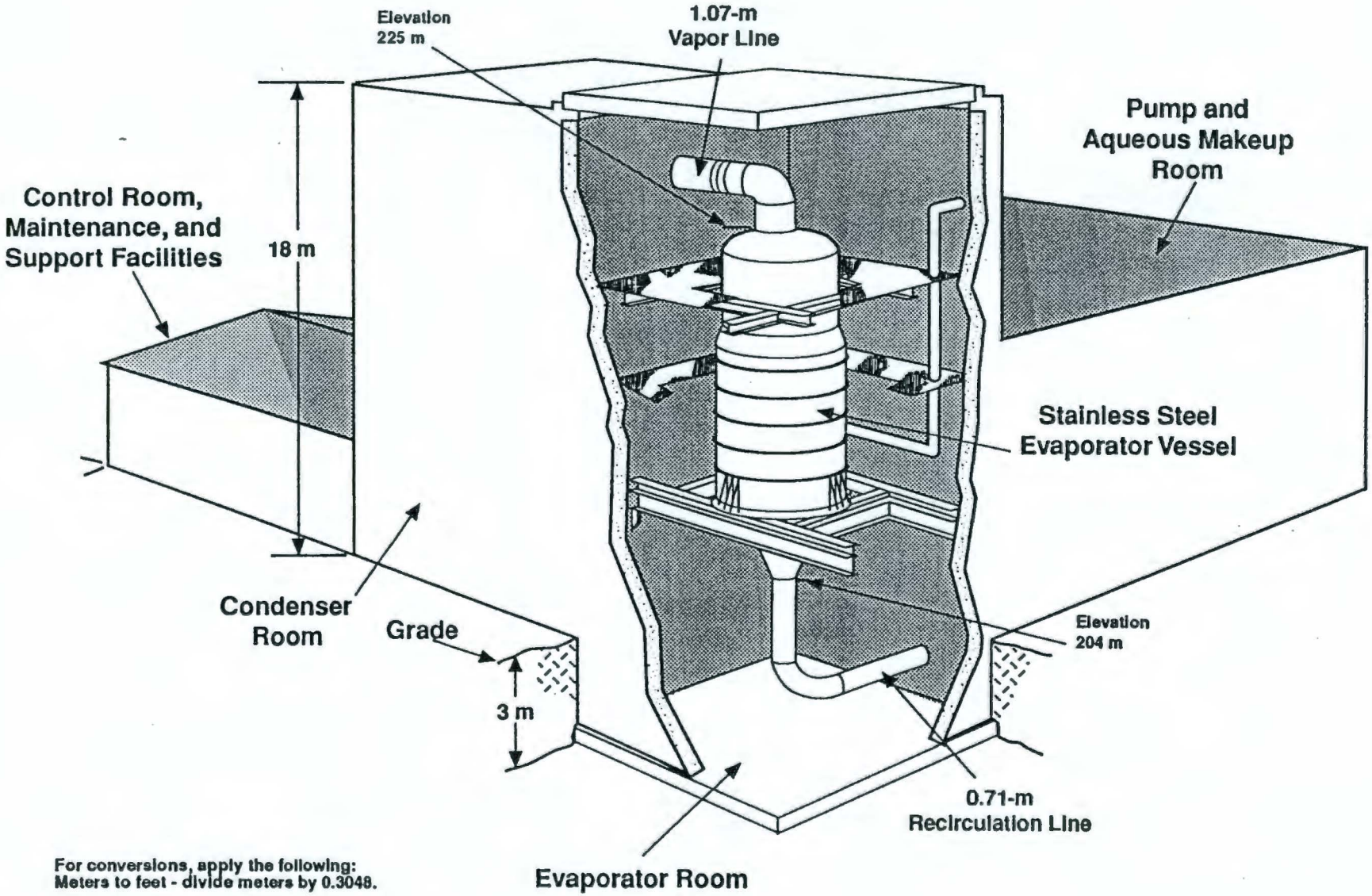
Co-operator
A. LaMar Trego, President
Westinghouse Hanford Company

Date

242-A Evaporator
Site Plan



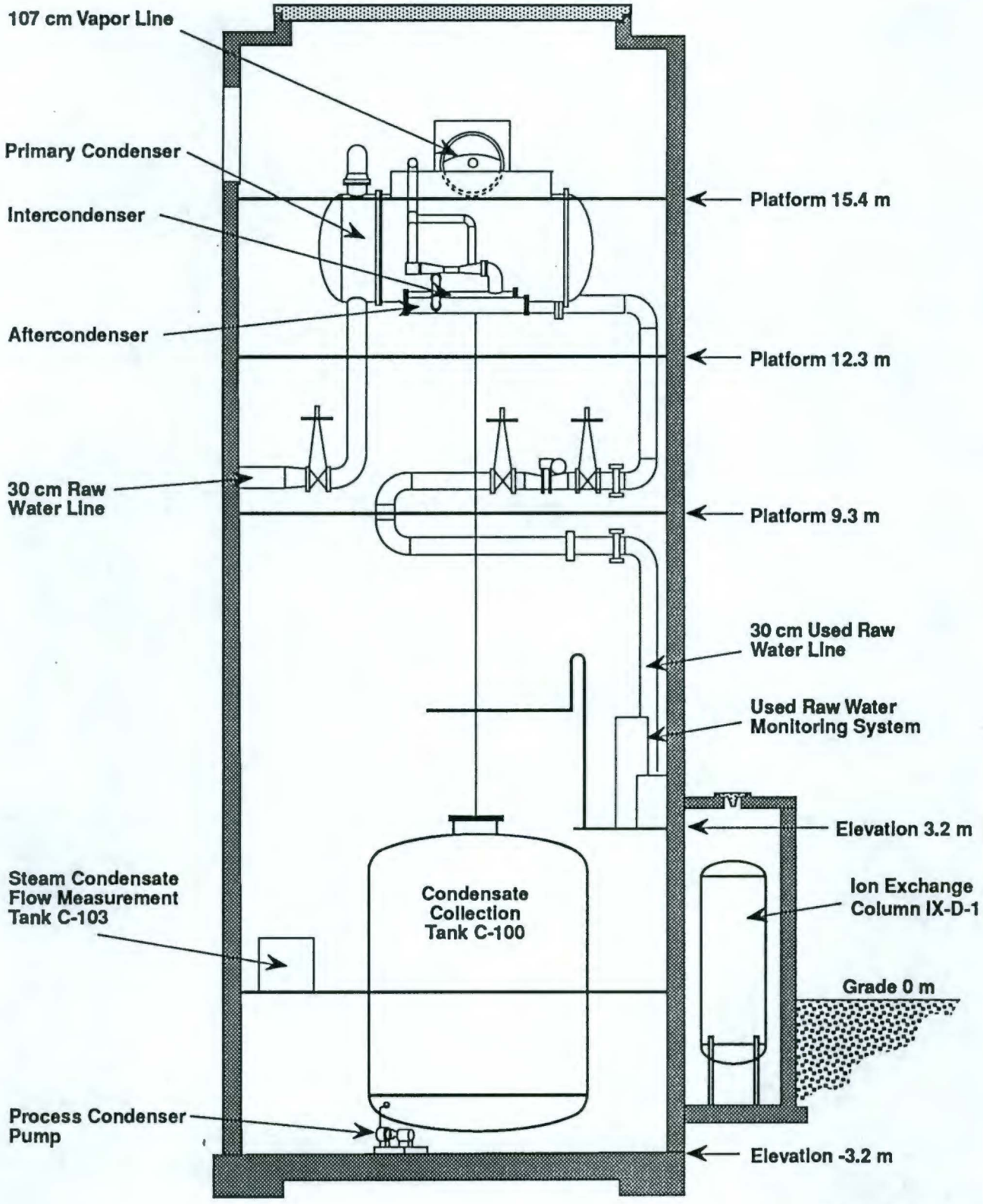
242-A Evaporator



For conversions, apply the following:
Meters to feet - divide meters by 0.3048.

39211048.1a

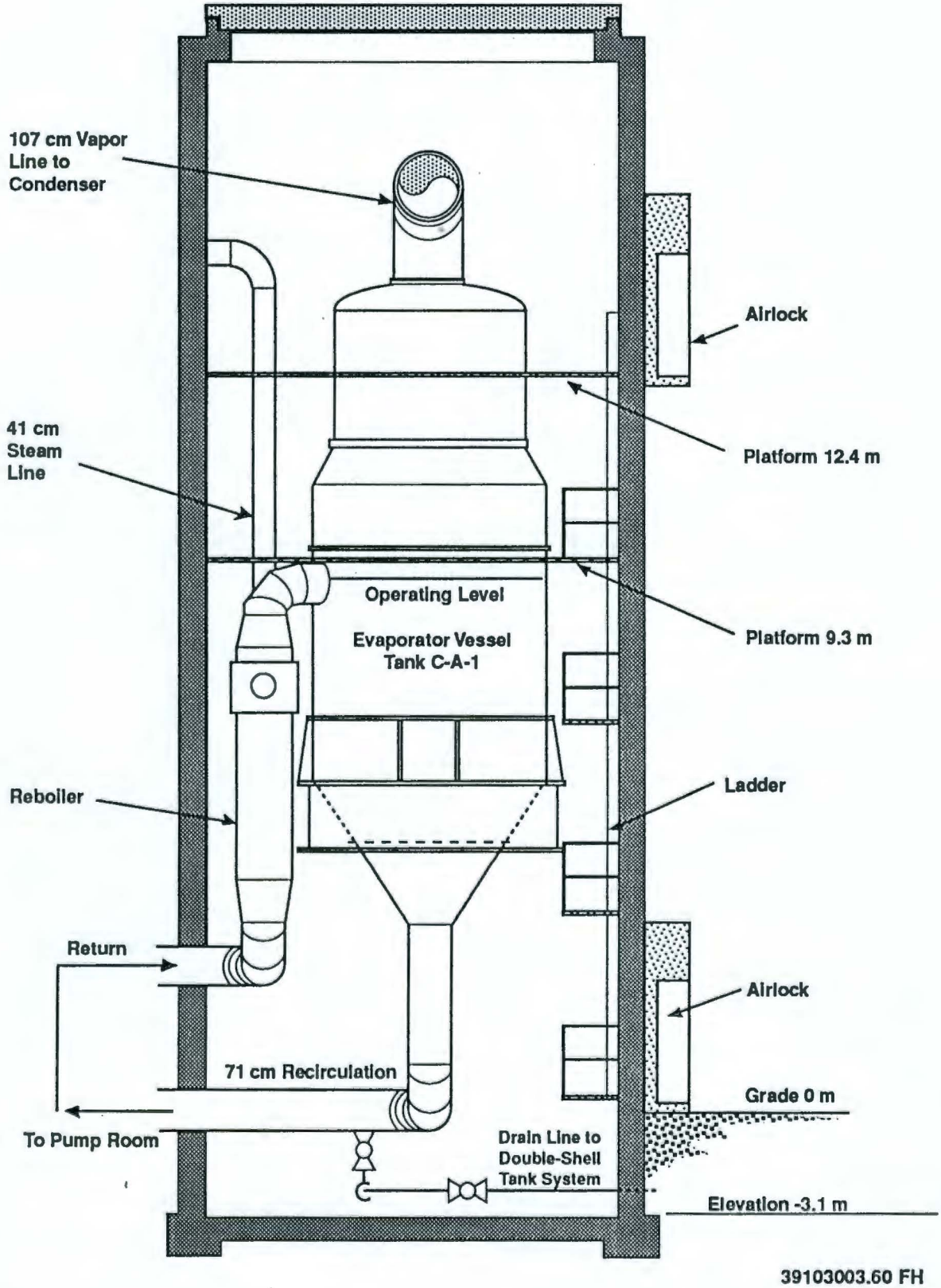
Tank C-100



39103003.61 FH

For conversions, apply the following:
Meters to feet - divide meters by 0.3408

Tank C-A-1



For conversions, apply the following:
Meters to feet - divide meters by 0.3408

242-A EVAPORATOR

46°33'12"
119°31'37"

91051644-1CN
(PHOTO TAKEN 1991)